Search Objects in a Video Footage

Start Assignment

- Due Sunday by 11:59pm
- Points 25
- Submitting a website url or a file upload
- Available Jul 9 at 12am - Jul 23 at 11:59pm

This assignment focuses on computer vision. To complete this assignment, you will need to perform the following tasks:

1. Use a pretrained Google Inception V3 deep learning model.
2. Allow users to upload videos through Colab or any other method.
3. Ensure the implementation is general enough to accept any user-provided video.
4. Split the uploaded video into frames and feed the frames into the Google Inception V3 model to detect objects.
5. Allow users to type a search query for an object that might be in the uploaded video.
6. The application should return and display the frame(s) with the object searched by the user, if it exists. If the object doesn't exist, display an error message: **"Object doesn't exist!!!".**

NB: Submit the .ipynb file with the source code.

Some rubric (3)

Criteria	Ratings				Pts
Use a pre-trained Google Inception V3 deep learning model	**5 to >3.0 pts Excellent** Use a pre-trained Google Inception V3 deep learning model	**3 to >1.0 pts Good** Build a CNN, with Dropout layers	**1 to >0.0 pts Poor** Build a CNN without Dropouts	**0 pts No marks** Failed to use a CNN	5 pts
Approach is General and Robust	**5 to >3.0 pts Excellent** Use a general and robust approach	**3 to >1.0 pts Good** Implemented but not generalistic enough	**1 to >0.0 pts Poor** Failed to generalize the application in approach	**0 pts No marks** Failed to make it general	5 pts

Allow users to upload videos within a given threshold of memory size	**5 to >3.0 pts** **Excellent** Allow users to upload videos within a given threshold of memory size	**3 to >1.0 pts** **Good** Allow users to upload videos	**1 to >0.0 pts** **Poor** Working with embedded videos	**0 pts** **No marks** Failed to upload videos	5 pts
Split the video uploaded by the user into frames and feed the frames in Google Inception V3 model to detect objects	**5 to >3.0 pts** **Excellent** Split the video uploaded by the user into frames and feed the frames in Google Inception V3 model to detect objects	**3 to >1.0 pts** **Good** Split the video uploaded by the user into frames	**1 to >0.0 pts** **Poor** Split the videos embedded in the code	**0 pts** **No marks** Failed to split the videos	5 pts
Allow users to search an object in the uploaded video and returning the image if it exists, return an error message if not.	**5 to >3.0 pts** **Excellent** Allow users to search an object in the uploaded video and returning the image if it exists, return an error message if not.	**3 to >2.0 pts** **Good** Allow users to search an object in the uploaded video and returning the image if it exists,	**2 to >1.0 pts** **Fair** Allow users to search an object in the uploaded video	**1 to >0.0 pts** **Poor** Return all images in a video	**0 pts** **No marks** Failed to return images	5 pts
					Total Points: 25